

Rec'd PCT 10 SEP 2004

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



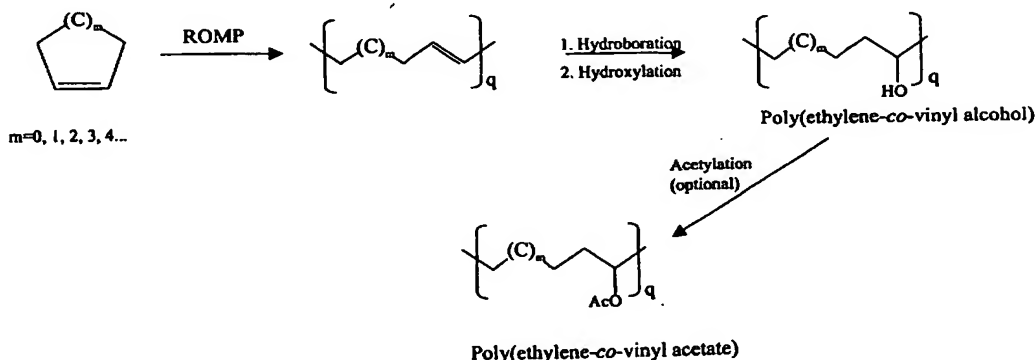
(43) International Publication Date  
25 September 2003 (25.09.2003)

PCT

(10) International Publication Number  
**WO 03/078499 A3**

- (51) International Patent Classification<sup>7</sup>: C08G 61/06, C08F 210/02, C08G 61/08
- (21) International Application Number: PCT/US03/07456
- (22) International Filing Date: 11 March 2003 (11.03.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/363,434 12 March 2002 (12.03.2002) US
- (71) Applicant (for all designated States except US): DOW GLOBAL TECHNOLOGIES INC. [US/US]; Washington Street, 1790 Building, Midland, MI 48674 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WEAVER, John, D.** [US/US]; 32 Anchusa Street, Lake Jackson, TX 77566 (US). **HARRIS, William, J.** [US/US]; 216 Plum Circle, Lake Jackson, TX 77566 (US). **HILL, Stephen, E.** [US/US]; 1901 N. Rock Island, Angleton, TX 77515 (US). **CHEUNG, Yunwa, W.** [US/US]; 104 Rosemary Lane, Lake Jackson, TX 77566 (US).
- (74) Agent: BAI, J., Benjamin; Jenkins & Gilchrist, 1100 Louisiana, Suite 1800, Houston, TX 77002 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report
- (88) Date of publication of the international search report:  
27 November 2003
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LINEAR ETHYLENE/VINYL ALCOHOL AND ETHYLENE/VINYL ACETATE POLYMERS AND PROCESS FOR MAKING SAME



(57) Abstract: A polymer comprises a repeating unit of ethylene and vinyl alcohol, characterized by a linear backbone with substantial absence of branching on the backbone. The polymer has a steady state oxygen permeability coefficient substantially independent of the humidity. In addition, a polymer comprises a repeating unit of ethylene and vinyl acetate, characterized by a linear backbone with substantial absence of branching on the backbone and a plurality of acetate groups bonded to the backbone. Some polymers comprise vinyl alcohol or acetate groups that are separated by x-2, x-1 or x carbon atoms, and such groups are present in a ratio of 1:2:1, wherein x ranges integrally from 3 to 12.

WO 03/078499 A3

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 7456

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C08G61/06 C08F210/02 C08G61/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08G C08F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 203 923 B1 (BANSLEBEN DONALD ALBERT ET AL) 20 March 2001 (2001-03-20) column 7, line 30 - line 44 example 7 column 9, line 50 - column 10, line 25 column 13, line 36 - line 51 column 2, line 47 - line 64 claim 1  --- -/--	1-28

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

22 August 2003

Date of mailing of the international search report

02/09/2003

Name and mailing address of the ISA

 European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Paalman, R

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 92/07456

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RAMAKRISHNAN S ET AL: "POLY(5-HYDROXYOCTENYLENE) AND ITS DERIVATIVES: SYNTHESIS VIA METATHESIS POLYMERIZATION OF AN ORGANOBORANE MONOMER" MACROMOLECULES, AMERICAN CHEMICAL SOCIETY. EASTON, US, vol. 23, no. 21, 15 October 1990 (1990-10-15), pages 4519-4524, XP000174801 ISSN: 0024-9297 page 4520, column 2, line 6 - line 9 page 4522, column 2, line 25 -page 4523, column 1, line 2 page 4520, column 2, paragraphs 3,4 -----	1-28
X	RAMAKRISHNAN S: "Well-Defined Ethylene-vinyl alcohol copolymers via hydroboration: Control of composition and distributuon of hte hydroxyl groups on the polymer backbone" MACROMOLECULES, AMERICAN CHEMICAL SOCIETY. EASTON US, vol. 24, 1991, pages 3753-3759, XP002251245 *** scheme 1 *** page 3756, column 2, paragraph 1 -----	1-28
A	US 5 939 504 A (GRUBBS ROBERT H ET AL) 17 August 1999 (1999-08-17) claims 1,32,37 -----	20

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 07456

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6203923	B1	20-03-2001	
		AU 748802 B2	13-06-2002
		AU 6156199 A	17-04-2000
		BR 9914103 A	31-07-2001
		CA 2343032 A1	06-04-2000
		CN 1320074 T	31-10-2001
		EP 1124686 A1	22-08-2001
		JP 3327910 B2	24-09-2002
		JP 2002525397 T	13-08-2002
		NZ 510172 A	29-04-2003
		WO 0018579 A1	06-04-2000
US 5939504	A	17-08-1999	
		AU 1277197 A	27-06-1997
		AU 2120697 A	28-08-1997
		CN 1208421 A	17-02-1999
		CN 1215411 A	28-04-1999
		EP 0865449 A1	23-09-1998
		EP 0879251 A1	25-11-1998
		JP 2000504359 T	11-04-2000
		JP 2001523276 T	20-11-2001
		WO 9720865 A1	12-06-1997
		WO 9729135 A1	14-08-1997
		US 6310121 B1	30-10-2001
		US 6020443 A	01-02-2000